Cambridge DPW's Contractor Guide to Permits & Work Zones

March 4th and 11th, 2009

Agenda

1. Welcome/ Introduction
2. Standard Specifications/ Details
3. Permits
4. Traffic Management Plans and Access
5. Other issues during construction: safety, stormwater, tree protection

Standard Specifications and Details

Be sure to check specs prior to work on

- Structures and pipes
- Sidewalks or pavement
- Common manhole separation
- Traffic management
- Trees
- Erosion control
- Survey
- Fences
- Concrete

http://www.cambridgema.gov/TheWorks/specs/Specs2009.html

Permits: what's changed

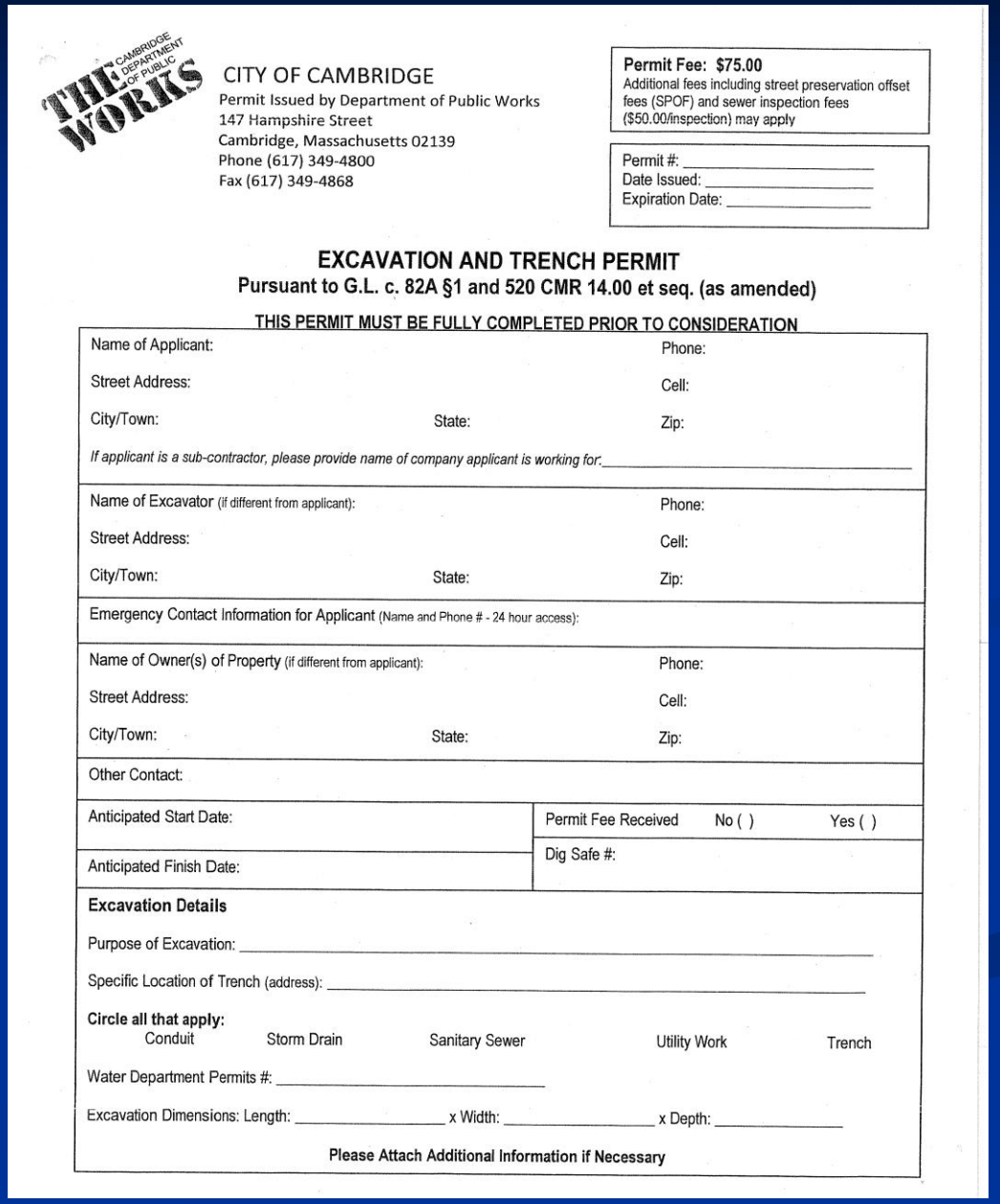
1. ***New applications for excavation, collection system access, and dewatering***
   - Streamlined process = fewer applications to complete
   - Multiple tasks will appear on 1 permit
   - Most fees can calculated upfront

2. ***Online applications (later this year)***

Permits: what's changed

State Law 520 CMR 14

Requires a permit for <u>all</u> trenching on either public or private property



CITY OF CAMBRIDGE
Permit Issued by Department of Public Works
147 Hampshire Street
Cambridge, Massachusetts 02139
Phone (617) 349-4800
Fax (617) 349-4868

Permit Fee: $75.00
Additional fees including street preservation offset fees (SPOF) and sewer inspection fees ($50.00/inspection) may apply

Permit #: _____
Date Issued: _____
Expiration Date: _____

EXCAVATION AND TRENCH PERMIT
Pursuant to G.L. c. 82A §1 and 520 CMR 14.00 et seq. (as amended)

THIS PERMIT MUST BE FULLY COMPLETED PRIOR TO CONSIDERATION

Name of Applicant: Phone:
Street Address: Cell:
City/Town: State: Zip:
If applicant is a sub-contractor, please provide name of company applicant is working for: _____

Name of Excavator (if different from applicant): Phone:
Street Address: Cell:
City/Town: State: Zip:

Emergency Contact Information for Applicant (Name and Phone # - 24 hour access):

Name of Owner(s) of Property (if different from applicant): Phone:
Street Address: Cell:
City/Town: State: Zip:

Other Contact:

Anticipated Start Date: | Permit Fee Received No ( ) Yes ( )
Anticipated Finish Date: | Dig Safe #:

Excavation Details

Purpose of Excavation: _____
Specific Location of Trench (address): _____

Circle all that apply:
Conduit Storm Drain Sanitary Sewer Utility Work Trench

Water Department Permits #: _____

Excavation Dimensions: Length: _____ x Width: _____ x Depth: _____

Please Attach Additional Information if Necessary

Permits: what's stayed the same

- Sidewalk Obstruction/ Closure (other than excavation)
- Crane and Boom
- Temporary Construction Access
- Excavation during moratorium (requires DPW Commissioner approval)

Permits/ approvals you may need from others

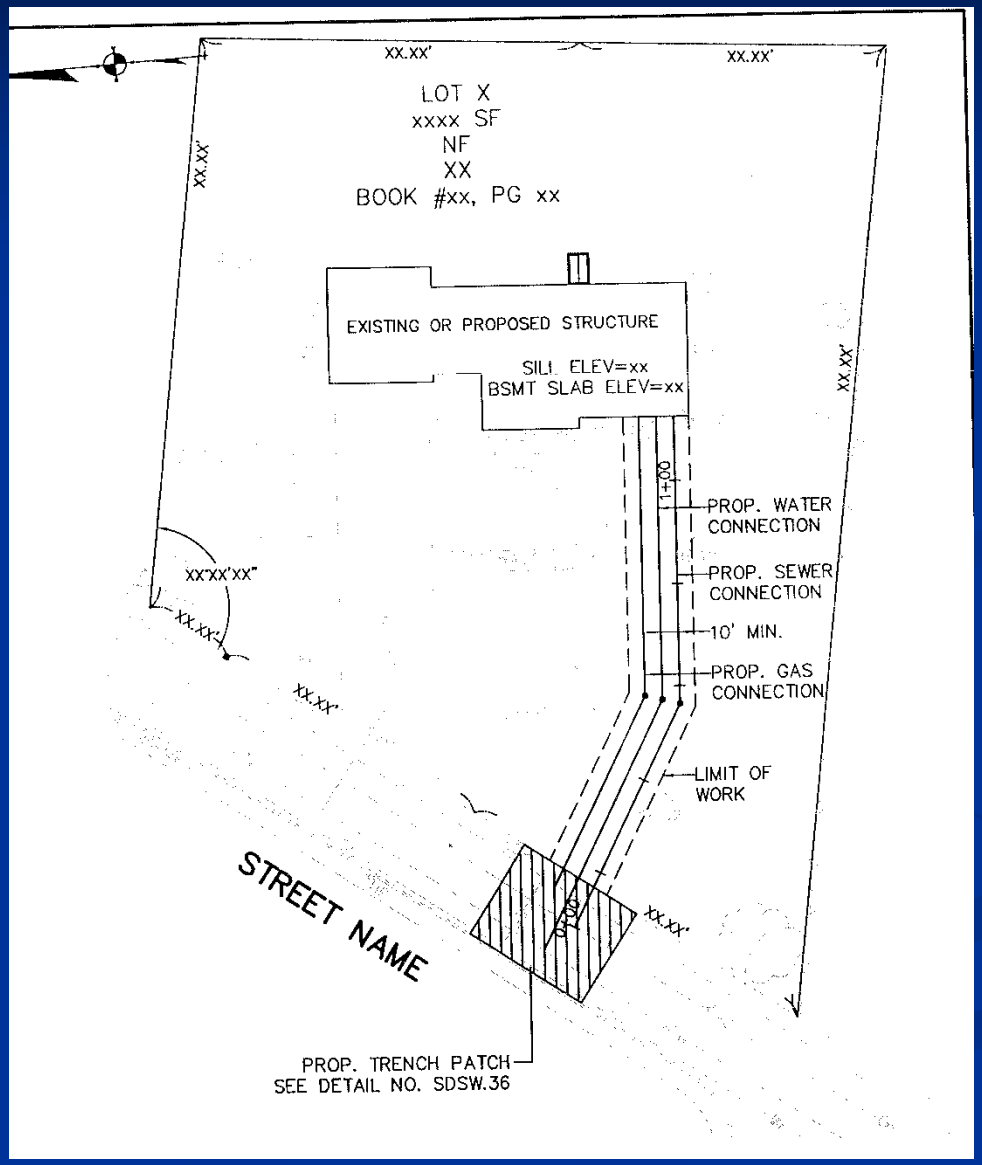
- Pole and Conduit Commission (grant of location)
- Traffic Department
- Water Department
- Electrical Department
- Inspectional Services
- Conservation Commission
- NStar Work Orders
- MWRA (8M, dewatering)
- EPA NPDES dewatering (catch basin or manhole that discharges into waterway)
- DEP Sewer Extension
- DCR

Permits: what's stayed the same

All DPW permits still require

1. Past balances paid in full
2. Permit application fees paid upfront; inspection and SPOF fees paid when picking up permit
3. Proof of current insurance and bond
4. Emergency Contact listed
5. Current DIG SAFE #
6. Site Plan
7. A Traffic Management Plan (TMP) that will provide access for all people at all times

Sample Site Plan



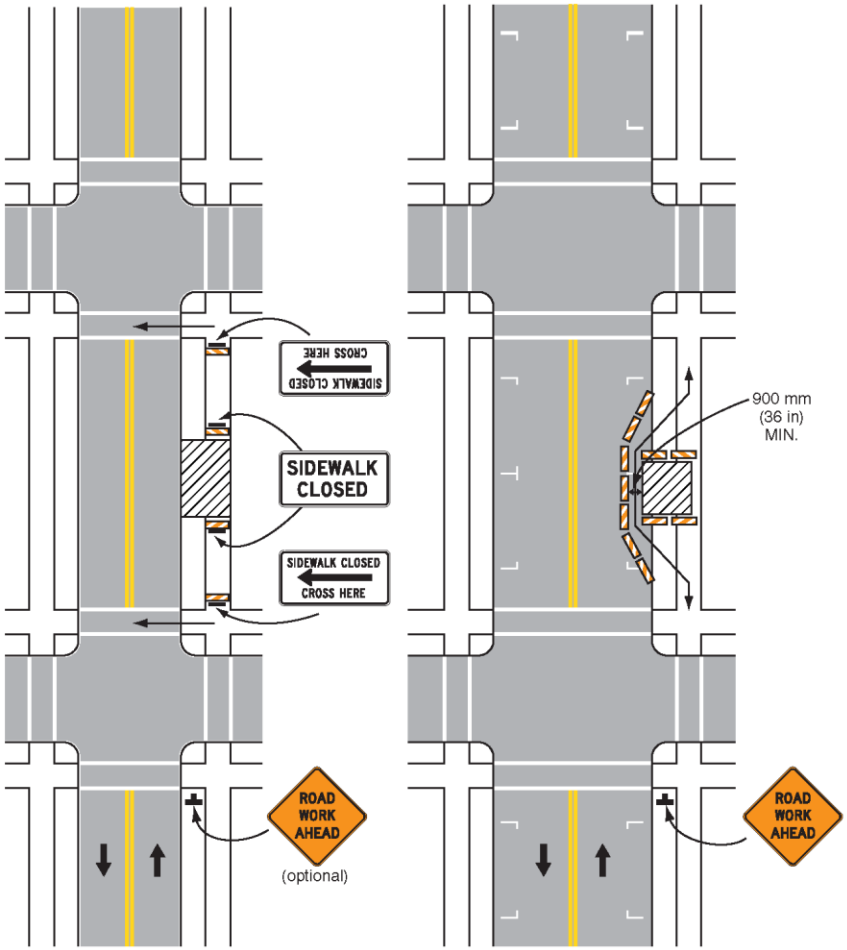
Traffic Management Plans

Pedestrian Access

TMP must be submitted with applications & must:

- Follow MUTCD & reflect unique location
- Account for pedestrians, cyclists & cars
- Include a police detail– but function without one

Figure 6H-28. Sidewalk Detour or Diversion (TA-28)



Typical Application 28

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Example from 2003 MUTCD: *Sidewalk closures & bypass walkway(TA-28)*

TMPs & Final Conditions Must Meet AAB & ADA Standards

Reference: access-board.gov/prowac/alterations/guide.htm#1 & pedbikeimages.org

Key Elements of Accessible Curb Cuts (Ramps)

Running Slope 8.33%

Cross-slope 2%

5’ wide

4’ level landing

Truncated domes

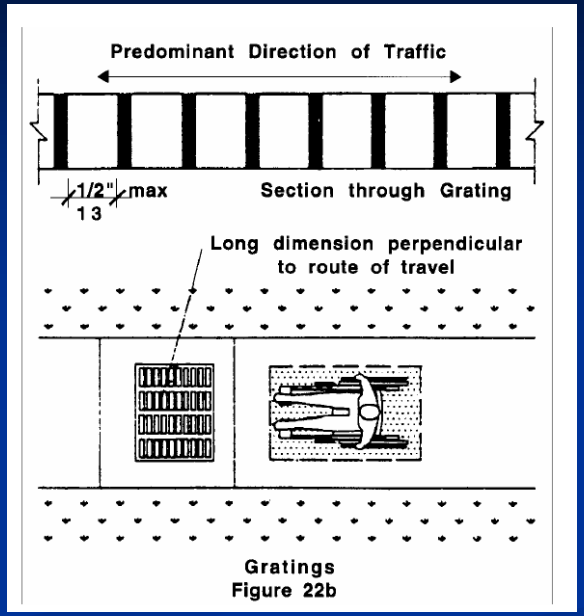
City & MHD Standard for final condition – Concrete Curb Cuts (Ramps)

Reference: access-board.gov/prowac/alterations/guide.htm#1 & pedbikeimages.org

Horizontal & Vertical Displacements

Horizontal Displacements:

- Gratings – ½” max, in direction of traffic



Vertical Displacements:

- ¼” maximum in walkways
- ½” maximum at bottom of ramp

Reference: access-board.gov/prowac/alterations/guide.htm#1 & pedbikeimages.org

Walkways

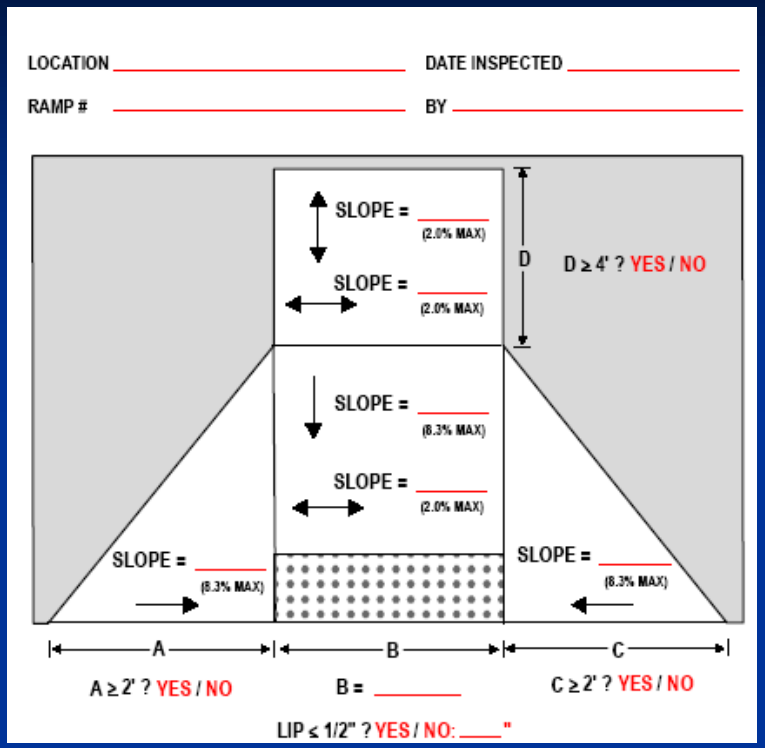
Widths:

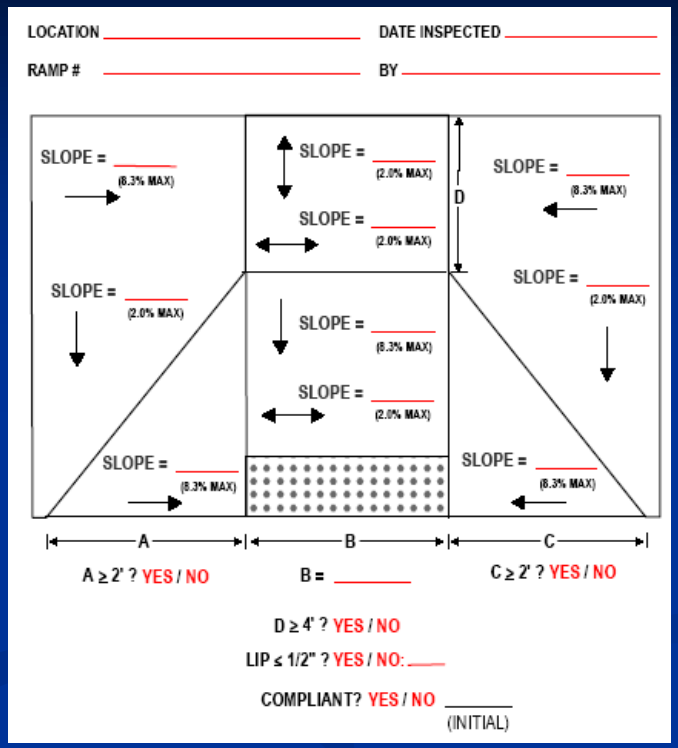
- 5’ desirable
- Min. 4’ (with passing zones every 200’)
- 3’ at specific pinch points, driveways, trees, etc.

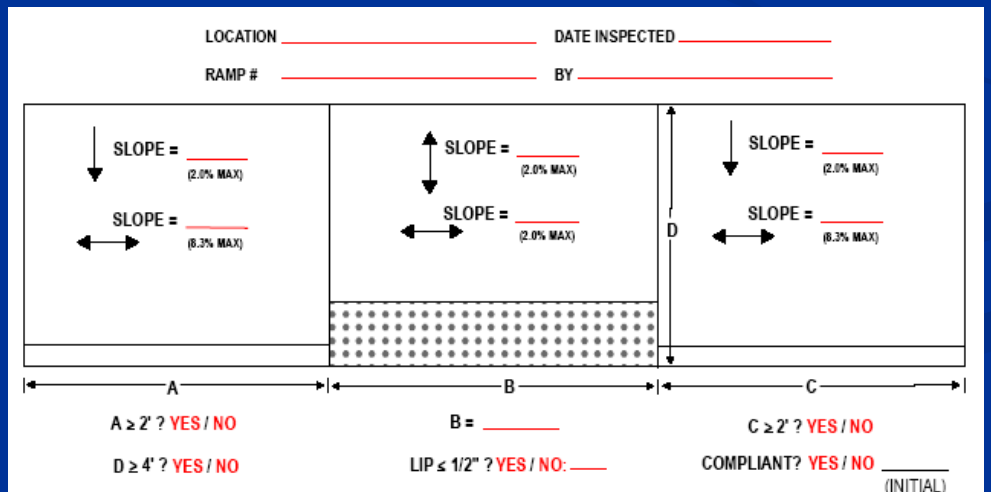
Cross-slope – 2% Max.

Reference: access-board.gov/prowac/alterations/guide.htm#1 & pedbikeimages.org

Inspection Forms

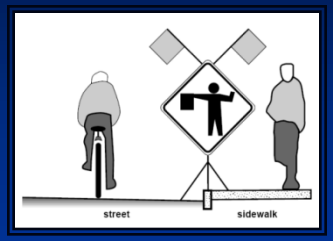






TMPs must account for bikes

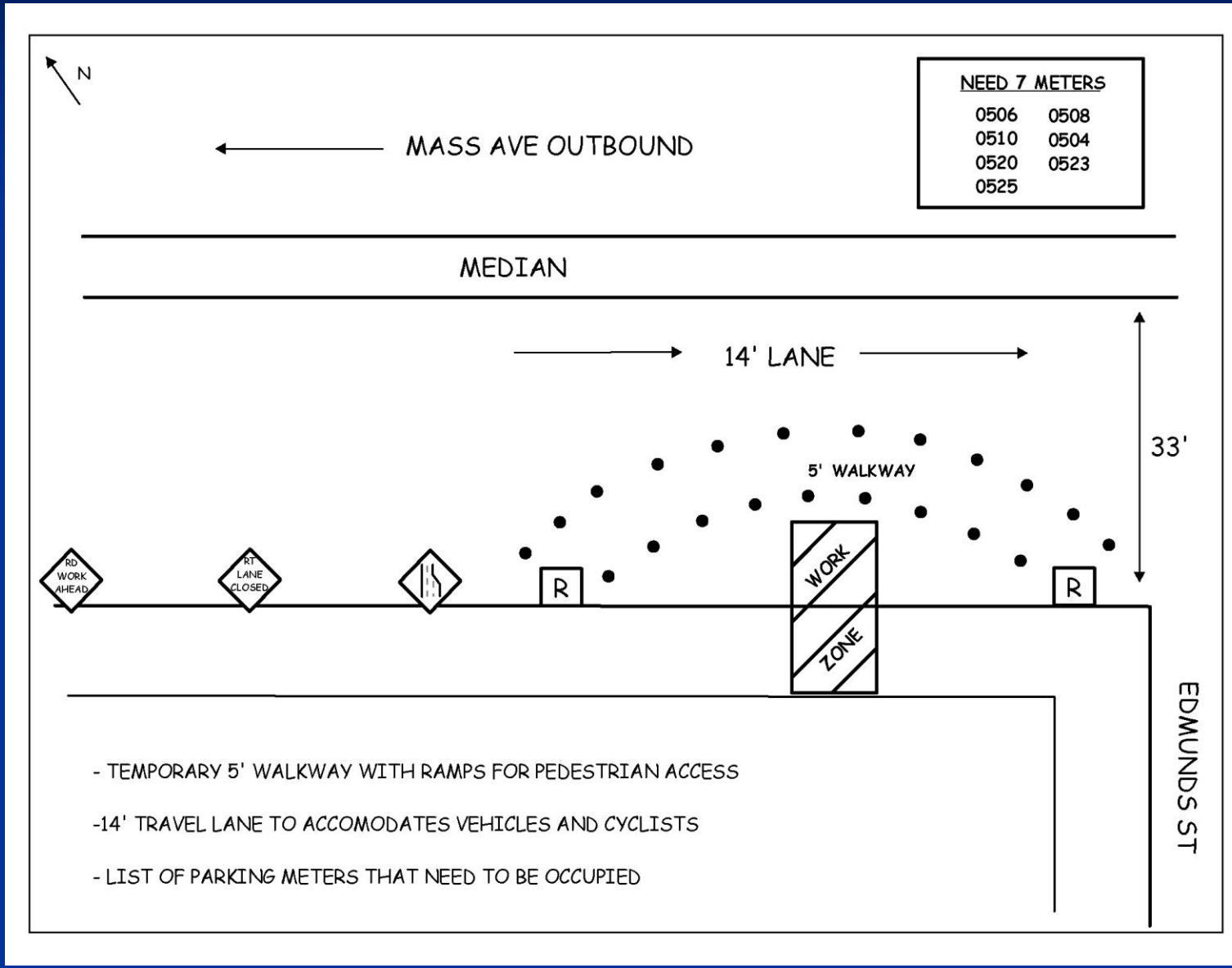
- Nothing abruptly in bikes' path of travel
- Where bike lanes are not present, provide a shared vehicle lane as wide as possible.
- If travel lanes < 14' wide, provide "BIKES MAY USE FULL LANE" signage
- Mark cuts, plates, castings, other hazards with fluorescent paint or physical barriers
- Minimize/ mark longitudinal joints



Reference: access-board.gov/prowac/alterations/guide.htm#1 & pedbikeimages.org

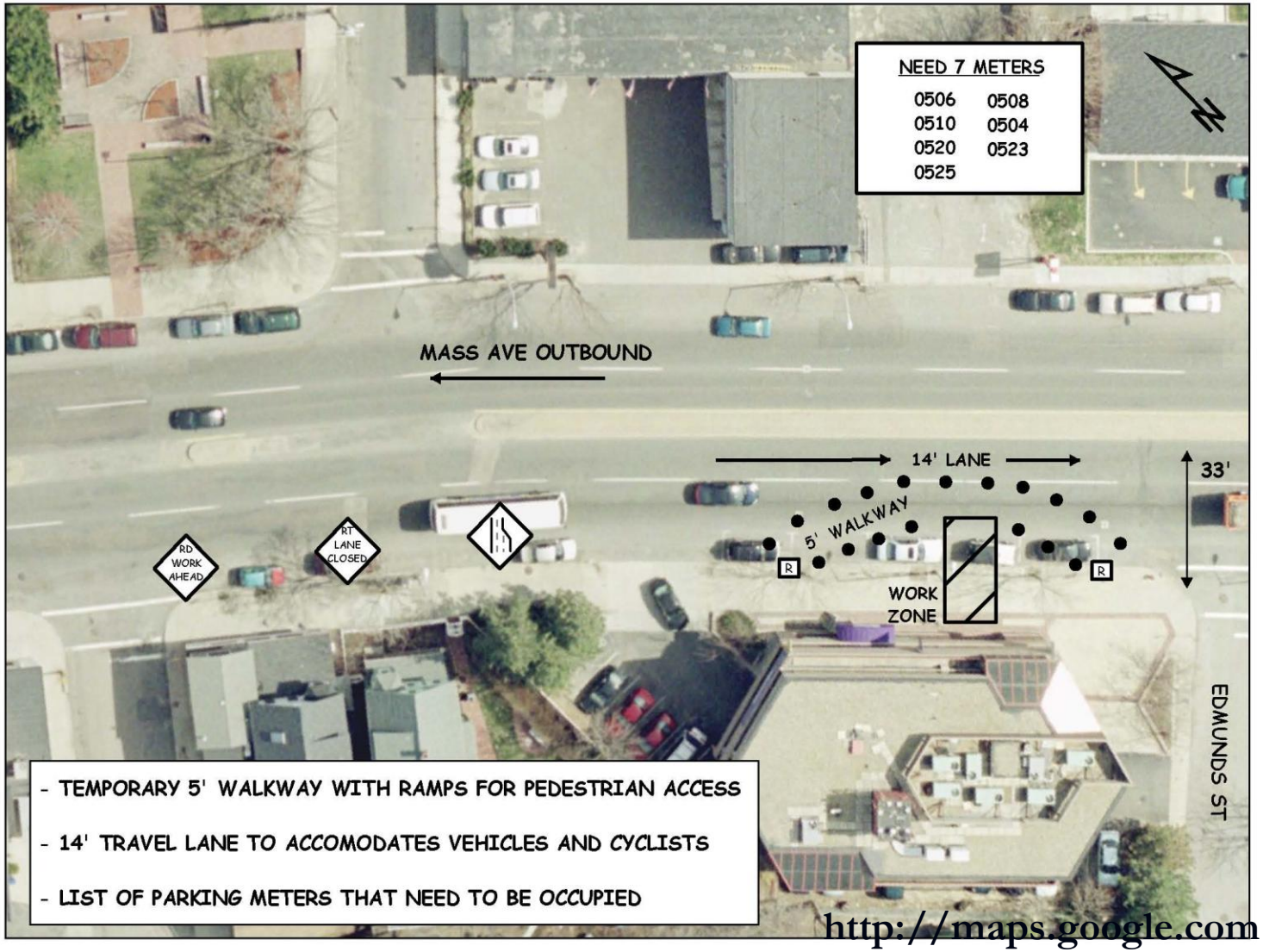
Sample TMP- Hand-Drawn

(Preferred Alternative -- keep pedestrians on same side of street.)



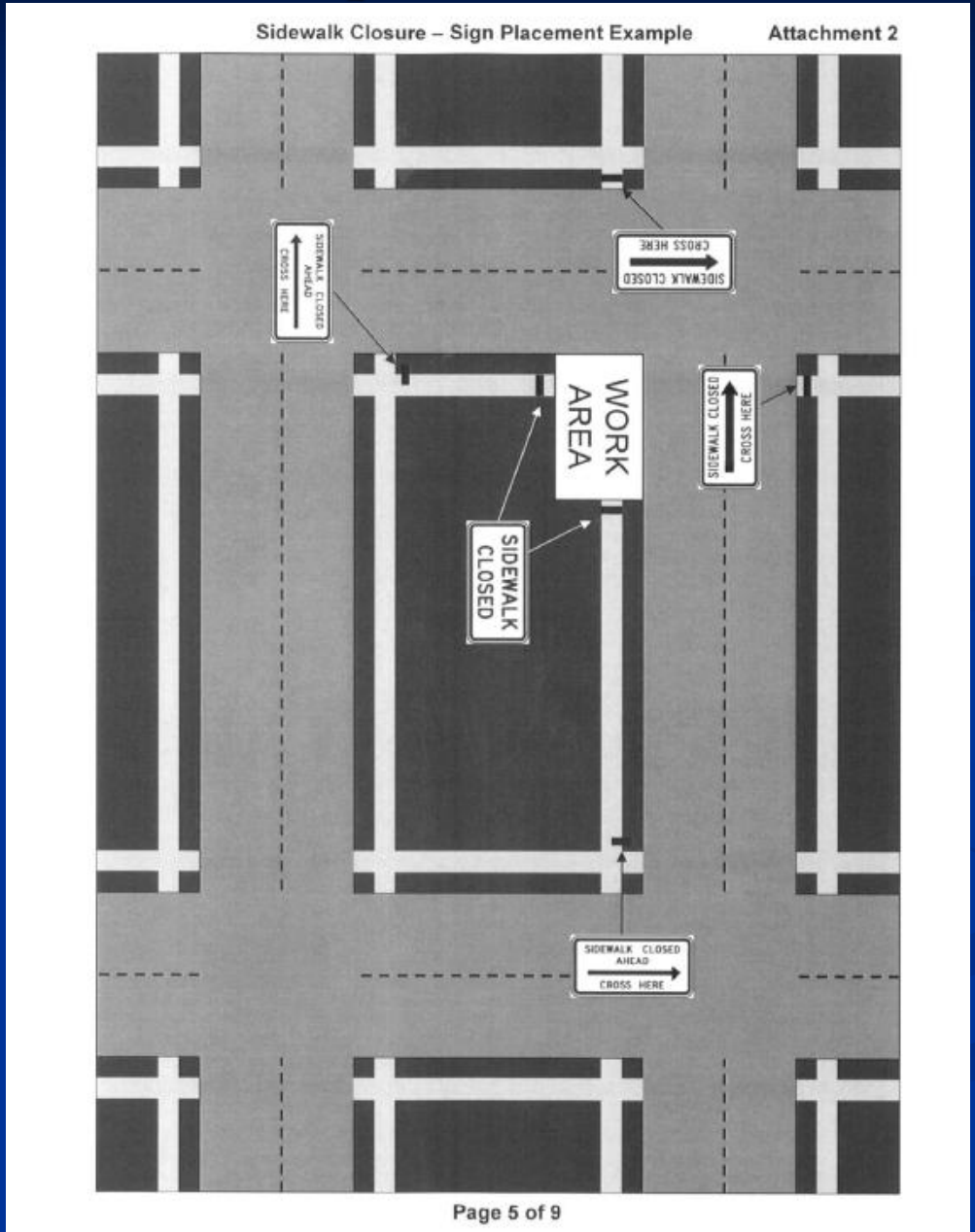
Same TMP- Using On-Line Mapping

(Preferred Alternative -- keep pedestrians on same side of street.)

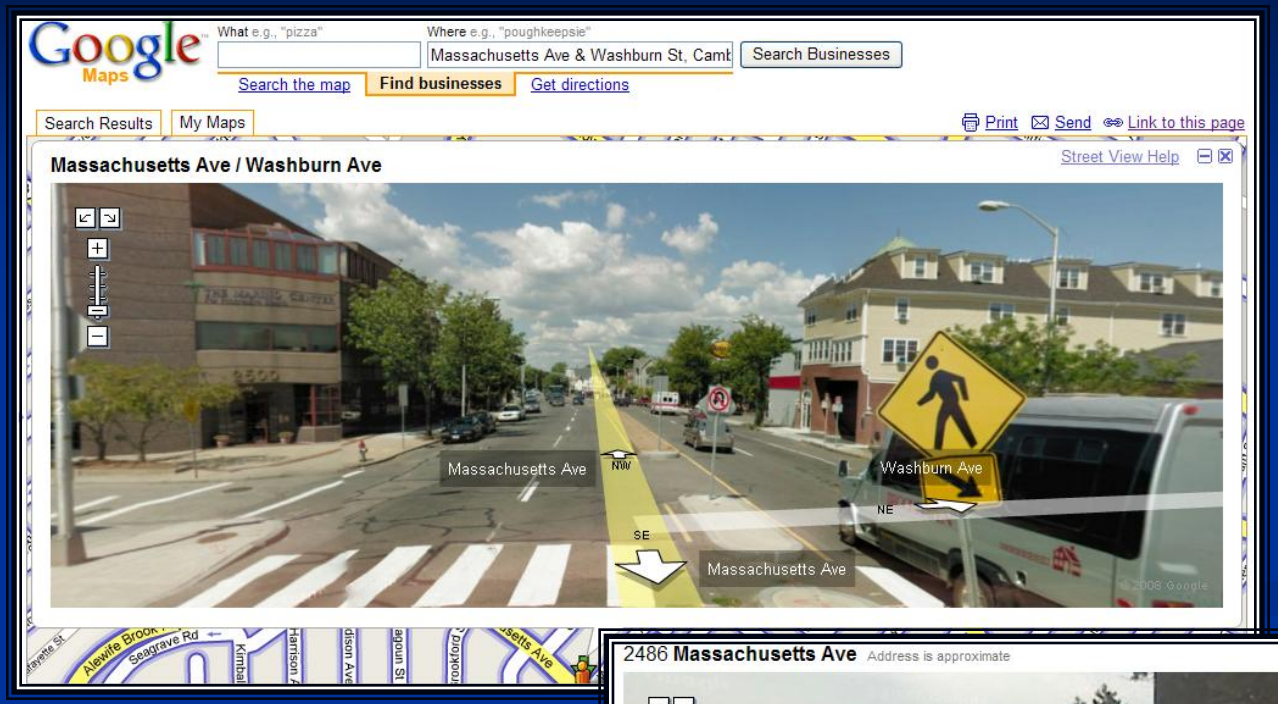


Sample TMP – Sidewalk Detour

(Detour Pedestrians – not preferred, but sometimes necessary.)

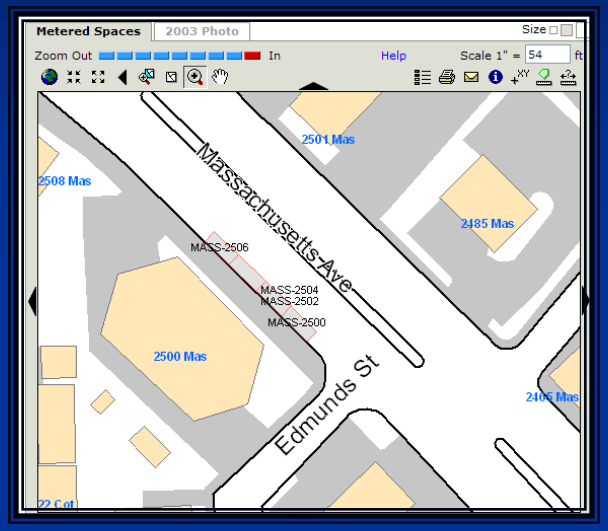


More images using Google

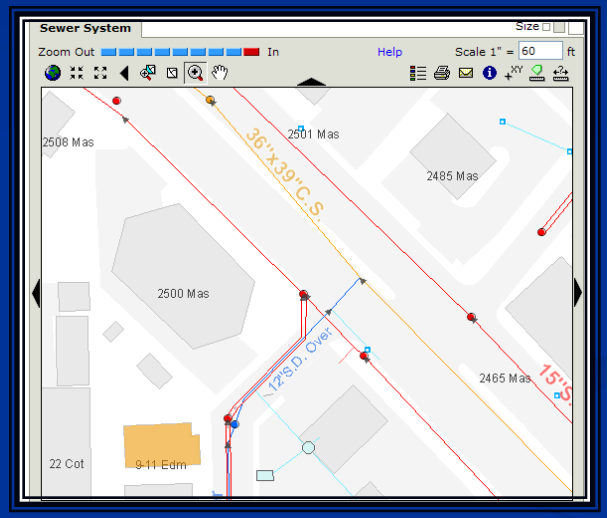


http://maps.google.com

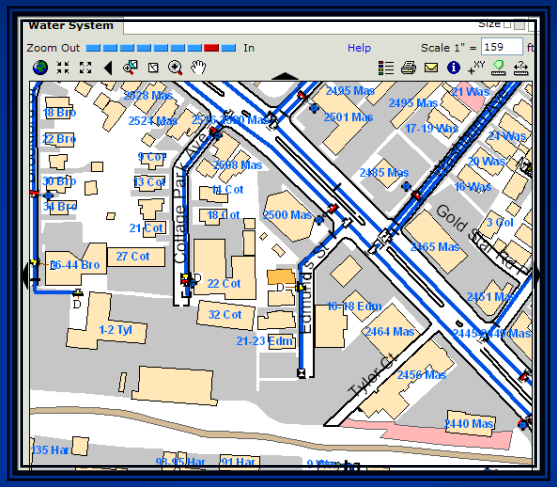
www.cambridgema.gov/GIS provides…



Parking Meter #s



Sewer & Drain Data



Water System Info

…and much more!

"No Parking" signs must

1. List contractor, contact info, type of operation- be sure to complete all blanks on the sign
2. Be updated if dates/ times change
3. Be limited to M-F, *5 work days max at a time*
4. Be posted *48 hours in advance* (log posting date & time)

- Also
  - If taking meters, Traffic Dept. permit is REQUIRED
  - Temporarily relocate handicap parking spaces within a reasonable distance

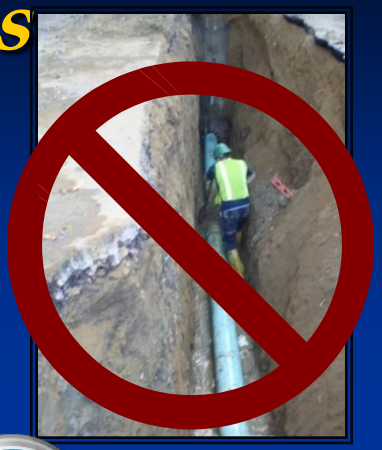
Failure to follow these steps may result in your permit being voided and/or signs being removed. Contractors may be charged for towing that is appealed and determined to be the result of improper posting.

While working:
ALWAYS PUT SAFETY FIRST

- Set up work zone as it appeared in your permit application
- Use OSHA-approved methods
- Wear personal protective equipment
- Protect utilities

Be safe in trenches

- Get DIG SAFE
- Use OSHA-approved shoring
- Practice safe confined space work
- Avoid damage to other utilities
- Wear personal protective equipment
- Keep steel plates on site for access



Don't dump into drains!

You are responsible for all sediment, dewatering, and discharge from your job site.

Protect Stormwater drains with Best Management Practices

- Protect catch basins w/ silt sacks
- Dewater directly to appropriate catch basin or manhole
- *Properly* dispose of debris
- Sweep work zone each day
- Get permits *before* dewatering
- No washing concrete into the street/ tree wells/ drains

Be a good neighbor

1. **Limit idling**
   - State Law: no more than 5 minutes when vehicles are not working.

2. **Observe work hours**
   - Do not start before 7 am, work late, or on weekends without special permission
   - Work hours include inspections. If you call for an inspection after 3:30 pm, it may not be possible or may have additional fees

3. **Manage dust**

4. **Do not enter private property without permission**
   - Especially to use water, dump, or dewater

5. **Arrange for proper sanitary facilities**

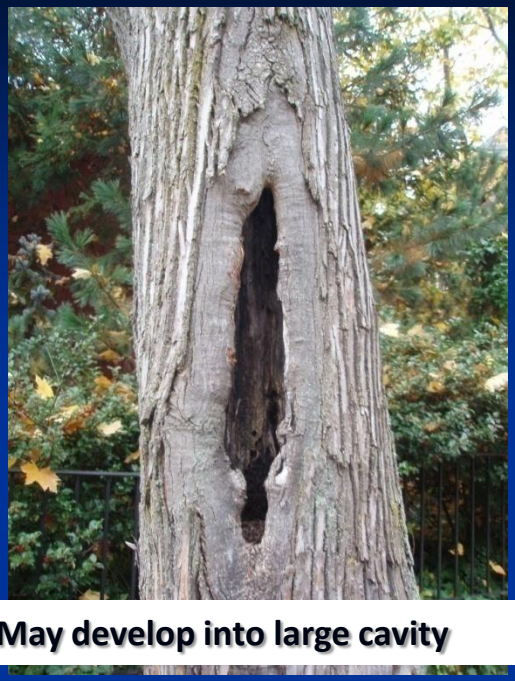
Protect street trees

- Avoid the Following When Working Around Trees:
  1. Wounding the tree
  2. Exposing Roots to Elements for Long Periods
  3. Cutting or Ripping Roots
  4. Compacting Rooting Soil with Materials and Equipment
  5. Breaking Branches
- Failure to do so will result in permits being revoked or fines

2 x 4's help protect trunks from injury

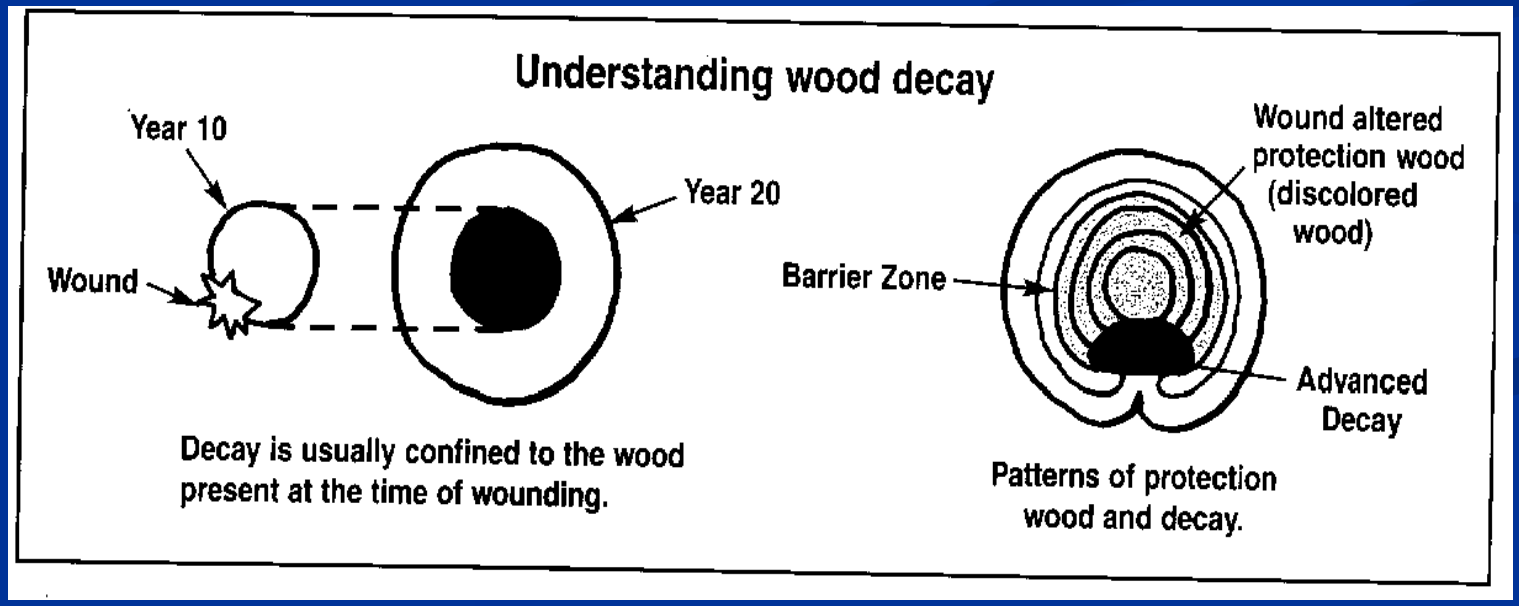
Wounding the Tree During Construction

Small wound at first



May develop into large cavity

Small wound increased the chance for failure years down the road



Exposed Roots

The majority of tree roots reside in the top 24” inches of the soil

Structural Roots: help support trunk and canopy and anchor tree in soil

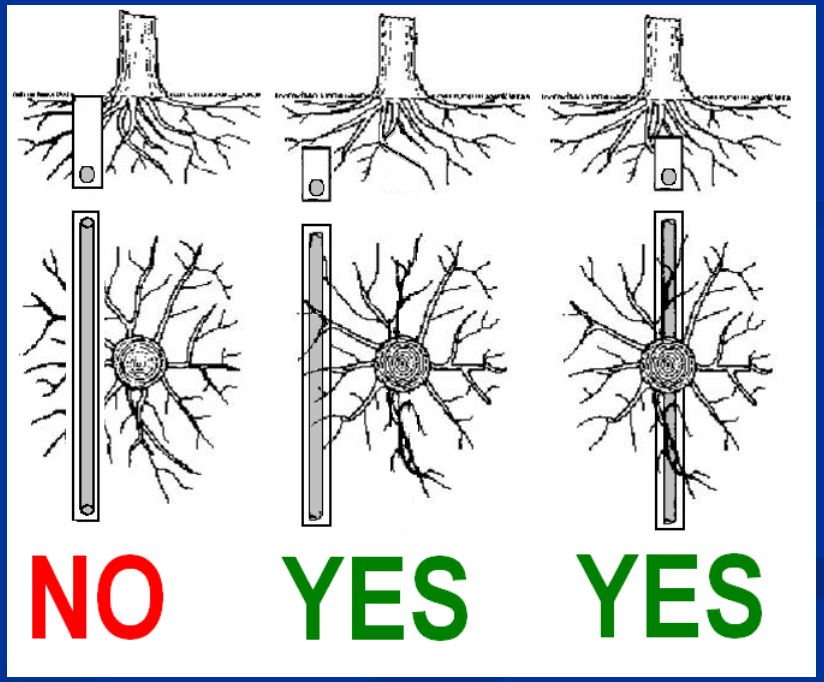
Roots were only exposed for a week and drought stress is already present in canopy

Feeder Roots: uptake water and nutrients for tree

Excavating around trees

> 60% of root system removed due to excavation – Tree was removed due to lack of structural roots

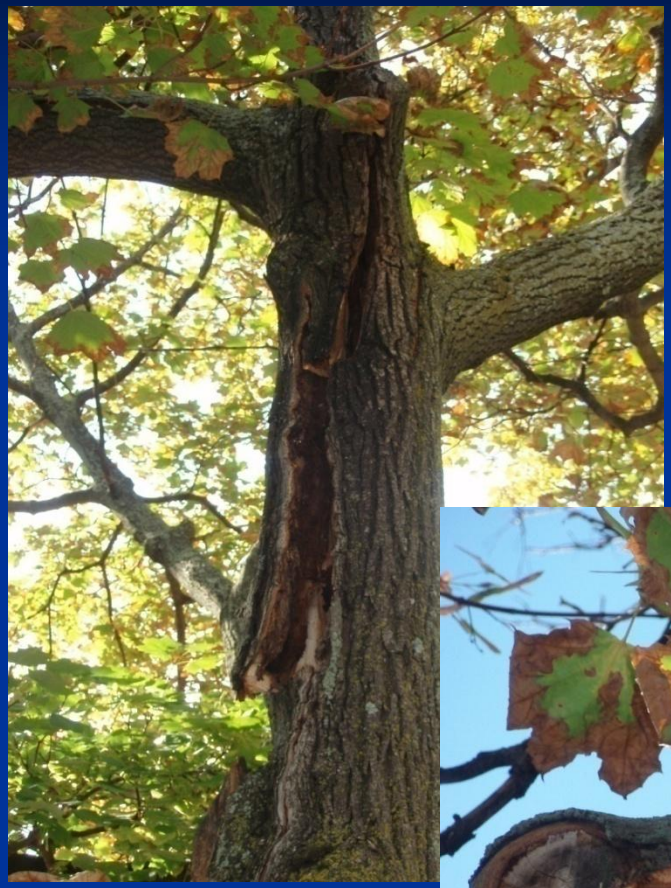
Less damage is done to tree roots if utilities are tunneled under a tree rather than across the roots.



Excavating around trees

Air excavation allows utility conduit to be inserted beneath tree roots, with minimal damage to the roots.

Mechanical Injury

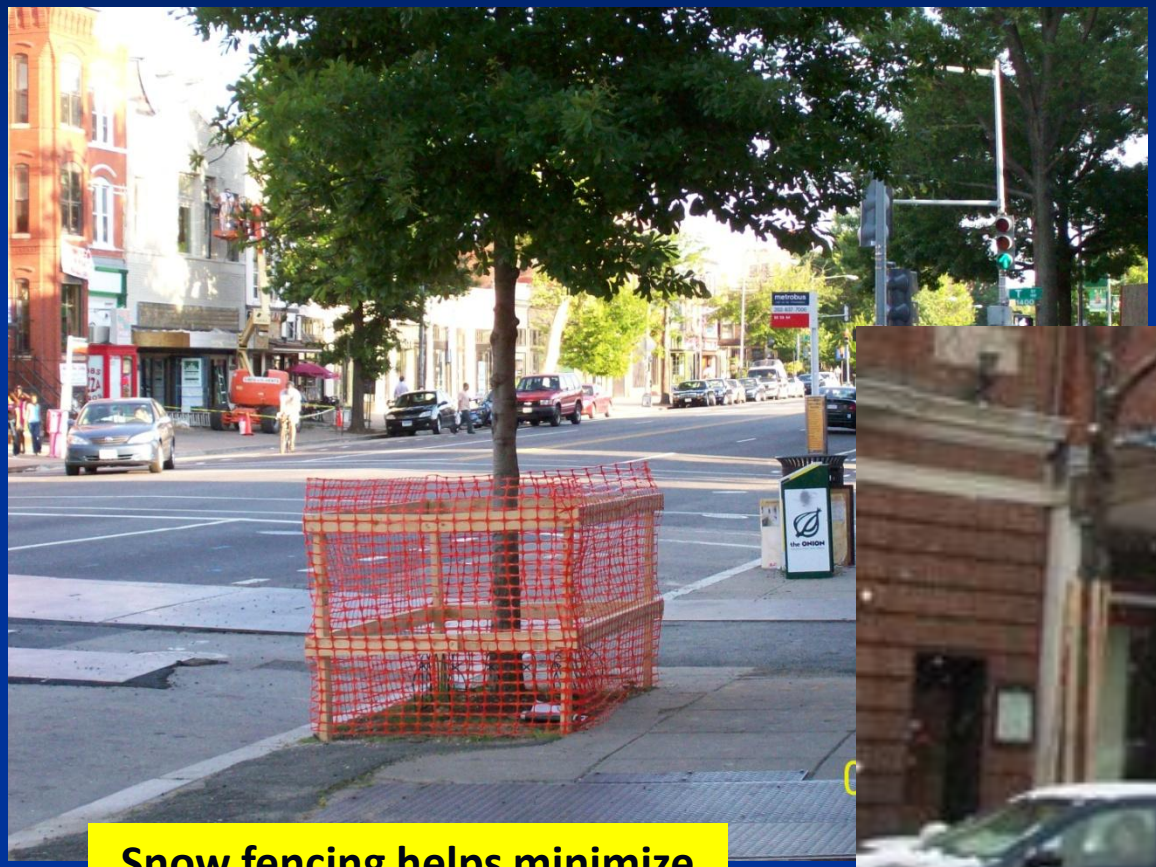


Look out for low hanging branches when working with construction equipment (i.e. backhoes, large trucks)

Storing Materials/Equipment on Roots

Tree protection should have been installed to protect roots from construction materials and soil compaction

Installing Tree Protection Around Trees



Snow fencing helps minimize soil compaction and storage of materials and equipment

2 x 4's help protect trunks from mechanical injury

Wires/String Around Trees

Remove all wires, tape or strapping used to hang signage. If left on, wire or strapping will girdle (strangle) tree and restrict water and nutrient movement, eventually causing tree to die.

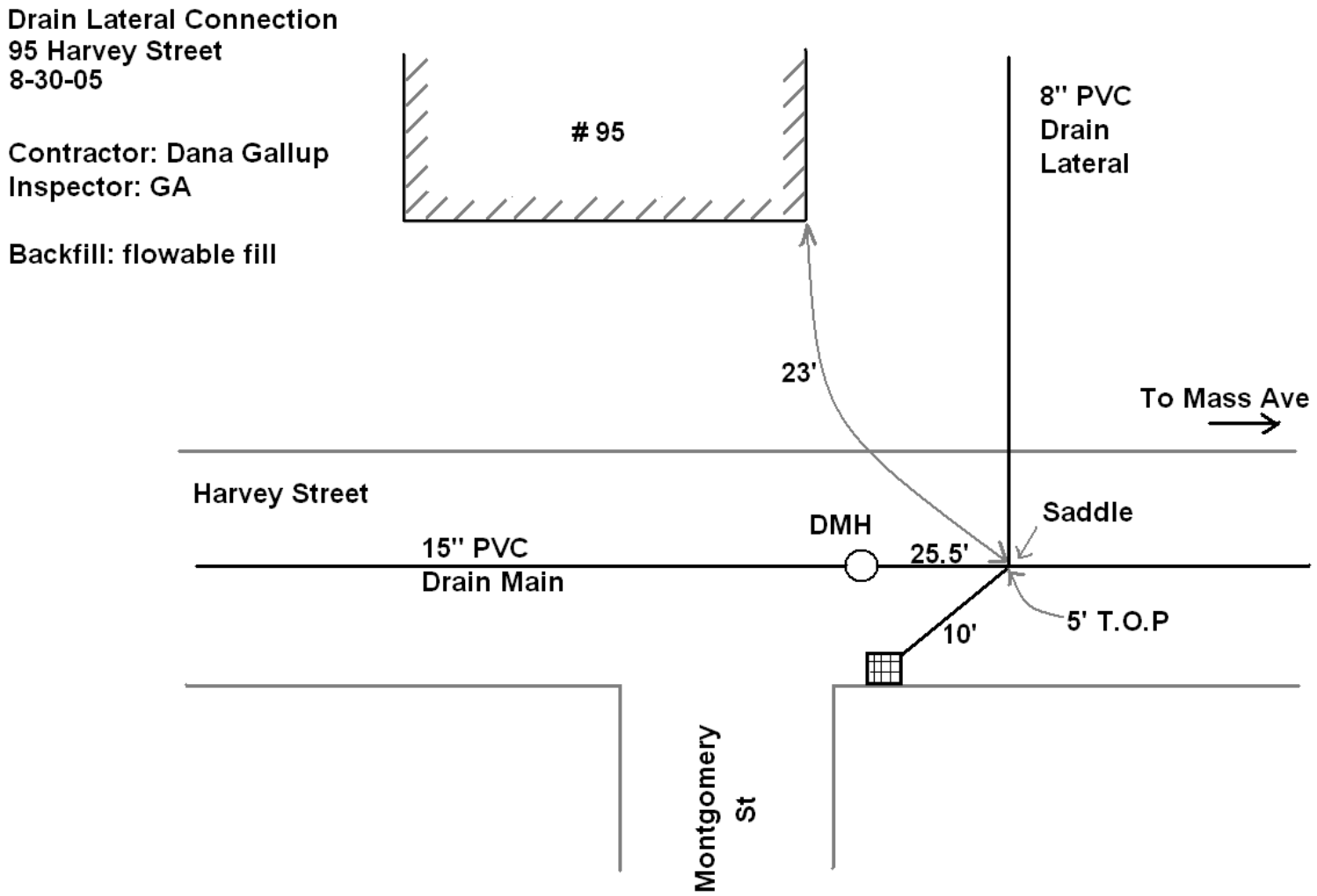
When your work is done

1. **Schedule inspections**
   - Give at least 24 hrs notice
   - Call 617-349-4800 to request a staff member be paged (do not leave a voicemail if request is time-sensitive)

2. ***Restore streets***
   - Fill & compact properly
   - Infrared patch or grind & overlay streets < 5 yrs old

3. ***Maintain the patch***
   - 1 year if you pay SPOF
   - 5 years if you don't pay SPOF

Provide as-builts



Questions?

Please do not hesitate to contact us any time:

- Bill Dwyer, Superintendent of Streets, Sidewalks & Sewers
  617- 349-4851/ wdwyer@cambridgema.gov
- Jeya Niranjan, Senior Engineer
  617-349-4848/ jniranjan@cambridgema.gov
- Dave Lefcourt, City Arborist
  617-349-6433/ dlefcourt@cambridgema.gov

Thank you for all of your time and efforts.